

REMARKS

I. SUMMARY OF THE OFFICE ACTION AND CLAIM STATUS

The summary page of the office action indicates that claims 216-264 were examined and rejected. Page 2 of the office action indicates that the IDSs filed 1-16-08 and 1-22-08 have been considered. Pages 2 and 3 of the office action reject claims 216-264 under the first paragraph of 35 USC 112.

Claims 265-272 are added.

Claims 1-215, 217, 218, 235, 237, 245, 247, 248, 256, and 264 are canceled.

Claims 216, 219-234, 236, 238-244, 246, 249-255, 257-263, and 265-272 are pending.

Claims 216 and 244 are the independent claims.

II. EXAMINER INTERVIEW

The Interview summary in the communication mailed 5/21/2008 requires that the response to the office action also include the substance of the 5/8/2008 interview. The examiner's summary of the substance of that interview, in the "Interview Summary" form, is a substantially correct statement of the substance of the interview. It states:

Discussed the new matter rejection. Applicant provided multiple references to the specification supporting "symmetric" examples. However, Examiner maintained the specification does not provide support for a generic symmetric first surface including a diffractive pattern. It was discussed to incorporate the limitations of claims 238 and 259 into claims 216 and 244 such that "symmetric" would be limited to "symmetric according to a mathematical model that includes at least one of (1) terms of a conoid of rotation and (2) terms of a conoid of rotation and at least one polynomial term". Examiner stated this proposed amendment appears to overcome the new matter rejection. However, Applicant is requested to show written support of the lens being designed according to the parameters of claims 238 and 259.

III. REJECT OF CLAIMS 216-264 UNDER THE FIRST PARAGRAPH OF 35 USC 112

The office action rejected claims 216-264, stating that:

Claims 216-264 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claims 216 and 244 each recite new limitations regarding regions of the lens being symmetric about the optical axis. The limitation is considered to be new matter because the specification and claims as filed, only describe the lens to conform to various equations. Therefore the limitation "symmetric about the optical axis", without a limitation regarding the equations forming the symmetric pattern, is broader in scope than the original disclosure. In other words, this limitation includes embodiments for a lens comprising symmetric portions which were not disclosed in the original disclosure.

Claims 217-243 and 245-264 directly depend from, and include the limitations of claims 216 and 244.

The applicant disagrees with the examiner's rejection with regard to the use of the term "symmetric" in claims 216 and 244. However, in order to quickly advance prosecution of the present application, the applicant amends claims 216 and 244 by removing the symmetry limitation and adding different limitations as discussed below. The applicant reserves the right to present claims including the "symmetric" term in this or another application.

IV. SUPPORT FOR INDEPENDENT CLAIMS 216 AND 244

The new recitation in claim 216 reads as follows:

wherein at least one of said first shape and said second shape has an aspheric component configured to reduce, for at least one of said base focus and said additional focus, a positive spherical aberration of a wavefront passing through said intraocular lens.

The new recitation in claim 244 reads as follows:

wherein said intraocular lens is configured such that, when a wavefront expressible by a Zernike polynomial passes through said intraocular lens, said intraocular lens reduces a positive rotationally symmetric fourth order Zernike term of said Zernike polynomial.

Various parts of the specification as originally filed may be used to support the new recitations in claims 216 and 244. For example, the paragraph spanning pages 13 and 14 and the paragraph starting on page 8 line 15 in the specification support the new recitations in claims 216 and 244. The paragraph spanning pages 13 and 14 in the specification states that:

In a specific embodiment of the invention, the wavefront obtains reduced aberration terms expressed in rotationally symmetric Zernike terms up to the fourth order. For this purpose, the surface of the bifocal intraocular lens is designed to reduce a positive spherical aberration term of a passing wavefront for at least one of the foci. In this text positive spherical aberration is defined such that a spherical surface with positive power produces positive spherical aberration. Preferably the bifocal lens is adapted to compensate for spherical aberration for at least one of the foci, and more preferably it is adapted to compensate for at least one term of a Zernike polynomial representing the aberration of a wavefront, preferably at least the 11th Zernike term, see Table 1.

The paragraph starting at page 8 line 15 in the specification states that:

Also preferably, the wavefront aberrations herein are expressed as a linear combination of polynomials and the optical system comprising the corneal model and modeled intraocular lens provides, for at least one of the foci and preferably for each foci, a wavefront having obtained a substantial reduction in aberrations, as expressed by one or more such polynomial terms. In the art of optics, several types of polynomials are available to skilled persons for describing aberrations. Suitably, the polynomials are Seidel or Zernike polynomials. According to the present invention Zernike polynomials preferably are employed.

V. SUPPORT FOR NEW DEPENDENT CLAIM LIMITATIONS

Support of new claims 265-272 may be found at least in the following locations within the specification as originally filed: the paragraph starting on page 11, line 20; the paragraph starting on page 21, line 6; and the paragraphs starting on page 22, line 12 and line 27.

VI. PRIOR REJECTIONS OVER LIEBERMAN, USP 5,800,532

This amendment deletes "symmetry" recitations from the independent claims. Claims lacking the symmetry recitations were rejected over USP 5,800,532 to Lieberman in the office action dated 1/3/2008. However, Lieberman does not suggest the subject matter defined by independent claims 216 and 244.

Lieberman describes "An intraocular lens ... which includes a ... second refractive power region ... asymmetrically disposed on the inferior nasal quadrant of the intraocular lens." Abstract. Lieberman Figs. 4 and 5 element 42 generally shows the Lieberman's "second refractive power region ... asymmetrically disposed on the inferior nasal quadrant of the intraocular lens." Lieberman discusses element 42 inter alia at column 7 lines 18-42. In addition, Lieberman column 8 lines 45-47 disclose that element 42 may have a mono-focal diffractive element thereupon to provide "relatively increased dioptric strength." Finally, Lieberman column 3 lines 35-56, column 3 lines 57-64, and column 8 lines 1-13 teach away from a radially symmetric intra ocular lens. Lieberman states (at column 7 lines 11-14) that: "However, all that is important to the invention is that a second optical region of increased

dioptric power relative to a first optical region be asymmetrically disposed on one of the IOL 34's anterior or posterior surfaces 50, 58."

In contrast to Lieberman, amended claim 216 recites "A diffractive multifocal intraocular lens ... wherein at least one of said first shape and said second shape has an aspheric component configured to reduce, for at least one of said base focus and said additional focus, a positive spherical aberration of a wavefront passing through said intraocular lens." Lieberman does not disclose or suggest this limitation. Indeed, Lieberman is silent regarding either wavefronts or wavefront aberrations. Accordingly, Lieberman does not teach, or even suggest, a lens with an aspheric component that reduces a positive spherical aberration of a wavefront passing through an intraocular lens, as required by claim 216.

In contrast to Lieberman, amended claim 244 recites "A diffractive multifocal intraocular lens ...wherein said intraocular lens is configured such that, when a wavefront expressible by a Zernike polynomial passes through said intraocular lens, said intraocular lens reduces a positive rotationally symmetric fourth order Zernike term of said Zernike polynomial." Lieberman does not disclose or suggest this limitation. Indeed, Lieberman is silent regarding wavefronts, wavefront aberrations, or the characterization of wavefronts as Zernike polynomials. Accordingly, Lieberman does not teach, or even suggest, an intraocular lens that reduces a Zernike term, much less, that reduces a positive rotationally symmetric fourth order Zernike term, as required by claim 244.

VII. SUMMARY

The claims should now be in condition for allowance. If the examiner has any concerns he is urged to telephone me at 703-415-0012 extension 21 to advance prosecution.

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Date

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